



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/800,637	03/16/2004	Takashi Yashiki	250268US	1131
22850	7590	10/15/2007		
OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314				
			EXAMINER	
			MORILLO, JANEL COMBS	
			ART UNIT	PAPER NUMBER
			1793	
			NOTIFICATION DATE	DELIVERY MODE
			10/15/2007	ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patentdocket@oblon.com  
oblonpat@oblon.com  
jgardner@oblon.com

<b>Office Action Summary</b>	<b>Application No.</b> 10/800,637	<b>Applicant(s)</b> YASHIKI, TAKASHI	
	<b>Examiner</b> Janelle Combs-Morillo	<b>Art Unit</b> 1742	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 25 July 2007.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,4-6 and 12-19 is/are pending in the application.
- 4a) Of the above claim(s) 6 and 12-16 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,4,5 and 17-19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 4, 5, 17-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over XP'686 and teaching reference "ASM Handbook: Vol. 2" p 1169 and further in view of JP10-008234 (JP'234).

XP'686 teaches a high purity Ti alloy with 0.009% Fe max (see Table on bottom of 1st page). XP'686 does not mention the presence of Co or Nb, and therefore is held to teach substantially zero Co and Nb. XP'686 is drawn to a high purity titanium alloy also known as "iodide Ti" or "electrolytic Ti" (see XP'686, 1<sup>st</sup> paragraph), and though XP'686 does not specify the limits of Nb, and Co, the examiner points out that "ASM Handbook Vol. 2" p 1169 mentions that "iodide Ti" or "electrolytic Ti" have (strict) known impurity limits of Fe, Si, Ca, Cu, Mg, Mn, Sn, Zr, C, O, N, and Cl, with a balance consisting of Ti (see Table 49, all the elements added together =100.000 %). Nb and Co are not expected to be impurities of the high purity electrolytic Ti alloy taught by XP'686. Therefore, the combination of XP'686 and teaching reference "ASM Handbook Vol. 2" teach an overlapping alloy composition. Overlapping ranges have been held to be a prima facie case of obviousness, see MPEP § 2144.05. It would have been obvious to one of ordinary skill in the art to select any portion of the range, including the claimed range, from the broader range disclosed in the prior art, because the prior art finds that said composition in

Art Unit: 1742

the entire disclosed range has a suitable utility. Additionally, "The normal desire of scientists or artisans to improve upon what is already generally known provides the motivation to determine where in a disclosed set of percentage ranges is the optimum combination of percentages," *In re Peterson*, 65 USPQ2d at 1379 (CAFC 2003).

Concerning the limitation of an oxide film, XP'686 teaches the formation of a thin film is optional (see XP'686 1<sup>st</sup> column, "corrosion resistance"), and when desired, is formed by heating in air at temperatures  $>315^{\circ}\text{F}$  ( $>157^{\circ}\text{C}$ ), which overlaps the presently claimed product by process heating temperature. Additionally, JP'234 teaches a method of forming an oxide coating on a titanium alloy in order to prevent discoloration, wherein said oxide coating has a thickness of  $\geq 20 \text{ \AA}$  (see examples, abstract), which overlaps the presently claimed limit of  $170 \text{ \AA}$  or below. It would have been obvious to one of ordinary skill in the art to form an oxide layer, as taught by JP'234, on the high purity Ti alloys taught by XP'686, because JP'234 teaches that said thin oxide layer prevents discoloration for a long period of time (abstract).

Concerning the instant pickling step and heating time minimum (cl.1) as well as heating without a vacuum (cl. 19), though the prior art does not specify the instant product by process steps, it is well settled that a product-by-process claim defines a product, and that when the prior art discloses a product substantially the same as that being claimed, differing only in the manner by which it is made, the burden falls to applicant to show that any process steps associated therewith result in a product materially different from that disclosed in the prior art. See MPEP 2113, *In re Brown* (173 USPQ 685) and *In re Fessman* (180 USPQ 524) *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985). Once the examiner provides a rationale tending to show that the claimed product appears to be the same or similar to that of the prior art,

Art Unit: 1742

although produced by a different process, the burden shifts to applicant to come forward with evidence establishing an unobvious difference between the claimed product and the prior art product. *In re Marosi*, 710 F.2d 798, 802, 218 USPQ 289, 292.

Concerning claims 17 and 18, XP'686 does not specify said high purity Ti alloy is used as an external wall or reinforcing member of a building. However, XP'686 teaches that said alloy is processed into sheet, and has a minimum YS of 130 MPa and minimum UTS of 270-350 MPa (2<sup>nd</sup> column, see Table). It would have been obvious to one of ordinary skill in the art to use said high purity Ti alloy sheet taught by XP'686 as an external wall or reinforcing member of a building, because XP'686 teaches said alloy has good strength properties.

3. Claims 1, 4, 5, 17-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP'573 in view of JP'234.

JP'573 teaches a pure titanium alloy building material sheet comprising (in weight%): 0.01-0.06% Fe (100-600 ppm Fe, abstract, claim 1 of JP'573). Additionally, JP'573 teaches examples with 105-571 ppm Fe in Table 1, which fall within the presently claimed range of Fe. JP'573 does not mention the presence of Co or Nb, and therefore is held to teach substantially zero Co and Nb. JP'573 mentions the presence of minor amounts of Ni +Cr, however, it is unclear said amounts would substantially change the properties of said alloy. The transitional phrase "consisting essentially of" limits the scope of a claim to the specified materials or steps "and those that do not materially affect the basic and novel characteristic(s)" of the claimed invention. *In re Herz*, 537 F.2d 549, 551-52, 190 USPQ 461, 463 (CCPA 1976).

JP'573 does not mention the formation of an oxide film.

Art Unit: 1742

Concerning the limitation of an oxide film, JP'234 teaches a method of forming an oxide coating on a titanium alloy in order to prevent discoloration, wherein said oxide coating has a thickness of  $\geq 20 \text{ \AA}$  (see examples, abstract), which overlaps the presently claimed limit of 170  $\text{\AA}$  or below. It would have been obvious to one of ordinary skill in the art to form an oxide layer, as taught by JP'234, on the high purity Ti alloys taught by JP'234, because JP'234 teaches that said thin oxide layer prevents discoloration for a long period of time (abstract).

Concerning the instant pickling step and heating time minimum (cl.1) as well as heating without a vacuum (cl. 19), though the prior art does not specify the instant product by process steps, it is well settled that a product-by-process claim defines a product, and that when the prior art discloses a product substantially the same as that being claimed, differing only in the manner by which it is made, the burden falls to applicant to show that any process steps associated therewith result in a product materially different from that disclosed in the prior art. See MPEP 2113. Because the prior art teaches a product substantially the same as the presently claimed Ti alloy product with an oxide layer, then it is held that the combination of JP'573 and JP'234 have created a prima facie case of obviousness of the presently claimed invention.

Concerning claims 17 and 18, JP'573 teaches said high purity Ti alloy is used as a building material, such as roofing and outer wall material (see [0001]). Therefore, JP'573 meets the instant limitation of an external wall or reinforcing member of a building.

#### ***Response to Amendment/Arguments***

4. In the response July 25, 2007 applicant submitted various arguments traversing the rejections of record.

Art Unit: 1742

5. Applicant's argument that the present invention is allowable over the prior art of record because the claimed product by process exhibits unexpected results has not clearly been found persuasive. More specifically, applicant argues the instant heat treating process produces a  $\Delta E$  value superior to heating time outside a preferred value (argues process P Q R in spec exhibits inferior color difference  $\Delta E$ ). The examiner agrees said results are unexpected; however, it is unclear the Fe, Nb, and Co amounts in the examples are commensurate in scope with the claimed ranges. More particularly, the examples in Table 4 are drawn to between 0.03-0.06% Fe, 0.001% Nb, 0.001% Co. It is unclear if the unexpected behavior occurs over the entire claimed alloying ranges/ no clear nexus has been established between the unexpected results and the presently claimed invention.

The nonobviousness of a broader claimed range can be supported by evidence based on unexpected results from testing a narrower range if one of ordinary skill in the art would be able to determine a trend in the exemplified data which would allow the artisan to reasonably extend the probative value thereof. *In re Kollman*, 595 F.2d 48, 201 USPQ 193 (CCPA 1979). However, in the instant case, applicant has not established a trend to support the narrow ranges (or single data points) in the instant specification at Table 4.

Applicant should establish a nexus between the rebuttal evidence and the claimed invention, i.e., objective evidence of nonobviousness must be attributable to the claimed invention, see MPEP 2144.08. The weight attached to evidence of secondary considerations by the examiner will depend upon its relevance to the issue of obviousness and the amount and nature of the evidence, see MPEP 716.01(b). Note the great reliance placed on this type of evidence by the Supreme Court in upholding the patent in *United States v. Adams*, 383 U.S.

Art Unit: 1742

39,148 USPQ 479 (1966). To be given substantial weight in the determination of obviousness or nonobviousness, evidence of secondary considerations must be relevant to the subject matter as claimed, and therefore the examiner must determine whether there is a nexus between the merits of the claimed invention and the evidence of secondary considerations. *Ashland Oil, Inc. v. Delta Resins & Refractories, Inc.*, 776 F.2d 281, 305 n.42, 227 USPQ 657, 673-674 n. 42 (Fed. Cir. 1985), cert. denied, 475 U.S. 1017 (1986).

### ***Conclusion***

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Janelle Combs-Morillo whose telephone number is (571) 272-1240. The examiner can normally be reached on 8:30 am- 6:00 pm.



Art Unit: 1742

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on (571) 272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JCM  
October 4, 2007

ROY KING  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER